

EXHIBIT 1

VITA

NAME: Joseph Oliver Falkinham, III

BIRTH DATE AND PLACE: May 3, 1942 - Oakland, California

EDUCATION:

1970 Intern in Clinical Laboratory Medicine, David Grant USAF
Medical Center, Travis AFB, California

1969 Ph.D., Microbiology, University of California, Berkeley,
California

1964 A.B., Bacteriology, University of California, Berkeley,
California

PROFESSIONAL EMPLOYMENT:

1994-present Professor of Microbiology
Department of Biology
Fralin Biotechnology Center
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061

1980-1993 Associate Professor of Microbiology (tenured)
Department of Biology
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061

1974-1980 Assistant Professor of Microbiology
Department of Biology
Virginia Polytechnic Institute and State University
Blacksburg, VA 24061

1972-1974 Fellow in Microbiology and Research Associate
Department of Microbiology
University of Alabama Medical Center
Birmingham, Alabama 35294
Laboratory of Dr. Roy Curtiss, III

1971-1972 Captain USAF (BSC)
Chief, Laboratory Services
USAF Hospital
Castle AFB, California 95343

1969-1971 Captain USAF (BSC)
Chief, Chemistry and Special Chemistry Section
Department of Pathology
David Grant USAF Medical Center
Travis AFB, California 94535

1965-1969 Predoctoral Trainee, USPHS and Graduate Teaching Assistant
Department of Bacteriology, University of California
Berkeley, California 94720
Laboratory of Dr. Alvin J. Clark

1964-1965 Laboratory Technician and Teaching Assistant
Department of Soils and Plant Nutrition
University of California
Berkeley, California 94720
Laboratory of Dr. A. Douglas MacLaren

2025 RELEASE UNDER E.O. 14176

HONORS

- 1999 Symposium Speaker, European Congress of Clinical Microbiology and Infectious Diseases
Berlin, Germany
- 1998 Symposium Speaker, American Thoracic Society/American Lung Association
Chicago, IL
- 1997 Symposium Speaker, Australian Society for Microbiology
Adelaide, Australia
- 1993 Invited Lecturer, Society for General Microbiology
Exeter, United Kingdom.
- 1986 Divisional Lecturer, American Society of Microbiology,
Washington, D.C.

CONSULTANT

- 1993 - present Chief Scientific Advisor
Dominion Biosciences, Inc., Blacksburg, VA
- 1976 - present Scientific Consultant,
Sybron Chemicals, Inc., Salem, VA
- 1979 - 1993 Lecturer,
Patent Resources Group, Inc., Washington, D.C.

PATENTS

U.S. Patent Number 5,527,677
Water Sample Viral Contamination Detection System
 M. Ijzerman, C. Hagedorn, III, and J.O. Falkinham, III
 Issued 18 June 1996

U.S. Patent Application No. 09/063/898
Non-Obligate Predatory Bacterium Burkholderia casidae
 J.O. Falkinham, III, C.C. Cain, and E.J. Casida
 Filed: 23 April 1998

ADDITIONAL PROFESSIONAL ACTIVITIES

- 1986 Lecturer in Genetic Engineering, U.S. Patent and Trademark Office,
U.S. Department of Commerce, Washington, D. C.
- 1986 Lecturer in Biotechnology, Office of Technology Assessment,
U. S. Congress, Washington, D. C.
- 1982 Visiting Scholar and Lecturer, Pennsylvania State University,
Pittsburgh, Pennsylvania
- 1978 Invited Scientist and Lecturer, Polish Academy of Sciences and
University of Warsaw, Warsaw, Poland.
- 1975 Visiting Scientist, Department of Microbiology,
University of Virginia Medical School, Charlottesville.

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PUBLICATIONS

Books

Wallace, B. and J.O. Falkinham, III. 1997. *The Study of Gene Action*. Cornell University Press.

Review Articles

Falkinham, J.O., III. 1996. Epidemiology of infection by nontuberculous mycobacteria. *Clin. Microbiol. Revs.* 9:177-215.

Falkinham, J.O., III. 1998. Biomanufacturing: the critical issues for product commercialisation. *J. Commercial Biotechnol.* 5:113-122.

Editor

Rastogi, N. and J.O. Falkinham, III. 1996. Solving the Dilemma of Antimycobacterial Chemotherapy, 13th Forum in Microbiology, *Research Microbiology* 147: Issues 1-2, pages 1-95.

Chapters in Books

Low, K.B. and J.O. Falkinham, III. 1974. F-prime elements of *Escherichia coli* K-12, p. 593-596. In: A.K. Laskin and H. Lechavalier (ed.), *Handbook of Microbiology*, Chemical Rubber Co., Cleveland, OH.

Curtiss, R., III, F.L. Macrina, and J.O. Falkinham, III. 1974. *Escherichia coli*: An overview, p. 113-134. In: R.C. King (ed.), *Handbook of Genetics*, Plenum Press, New York, NY.

Curtiss, R., III, R.G. Fenwick, Jr., R. Goldschmidt, and J.O. Falkinham, III. 1976. The mechanism of conjugation, p. 109-134. In: S. Mitsuhashi (ed.), *Transferable Drug Resistance Factor R*, University Park Press, Baltimore, MD.

Falkinham, J.O., III., B.C. Parker, and H. Gruft. 1978. Isolation of potentially pathogenic mycobacteria from coastal marine and fresh waters of the southeastern United States, with observations on their ecology, p. 166-188. In: W. Hess (ed.), *Proceedings of the Seafood Institute Seminar, '77*, Virginia Polytechnic Institute and State University, Blacksburg, VA.

Falkinham, J.O., III, B.C. Parker, K.L. George, S.L. Wendt, and H. Gruft. 1979. Epidemiology and ecology of the *Mycobacterium avium* - *M. intracellulare*, and *M. scrofulaceum* (MAIS) group in the United States, p. 1-18. In: J. Vaillier (ed.), *Colloque International sur les Mycobacteries Atypiques*. l'Université Claude-Bernard, Lyon, France.

George, K.L. and J.O. Falkinham, III. 1989. Aerosolization of mycobacteria, p. 211-220. In: P. Comtois (ed.) *Aerobiology, Health and Environment*. Centre de Recherches Ecologiques de Montreal, Montreal, Canada.

Falkinham, J.O., III. 1989. Factors influencing the aerosolization of mycobacteria, p. 17-26. In: E. C. Monahan and M. A. Van Patten (eds.), *Climate and Health Implications of Bubble-Mediated Sea-Air Exchange*. Sea Grant Marine Science Institute, University of Connecticut, Groton, CT.

Crawford, J.T. and J.O. Falkinham, III. 1990. Plasmids of the *Mycobacterium avium* complex, p. 97-119. In: J.J. McFadden (ed.), *Molecular Biology of the Mycobacteria*. Surrey University Press, London, United Kingdom.

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- Falkinham, J.O., III, K.L. George, M.A. Ford and B.C. Parker. 1990. Collection and characteristics of mycobacteria in aerosols, p. 71-81. In: P.R. Morey, J.C. Feeley, Sr., and J.A. Otten (eds.), *Biological Contaminants in Indoor Environments*. American Society for Testing and Materials, Philadelphia, PA.
- Falkinham, J.O., III. 1992. The impact of AIDS on leprosy, tuberculosis, and other mycobacterial diseases, p. 61-83. In: B. Wallace, N.R. Krieg, and A. Distler (eds.), *AIDS the Modern Plague*. Virginia Polytechnic Institute and State University, Blacksburg, VA.
- Falkinham, J.O., III. 1993. Nucleic acid probes, p. 701-710. In: P. Gerhardt (ed.), *Methods for General and Molecular Bacteriology*, American Society for Microbiology Press, Washington, D.C.
- Falkinham, J.O., III and J.T. Crawford. 1994. Plasmids, p. 185-198. In: B.R. Bloom (ed.), *Tuberculosis: Pathogenesis, Protection, and Control*, American Society for Microbiology Press, Washington, D.C.
- Falkinham, J.O., III. 1995. Molecular epidemiology techniques for the study of *Mycobacterium avium* complex infection, p. 23-44. In: J.A. Korvick and C.A. Benson (eds.), *Mycobacterium avium complex Infection: Progress in Research and Treatment*, Marcel Dekker, Inc., New York, NY.
- Falkinham, J.O., III. 1996. Probe technology and automation, p. 127-147. In: W.P. Olson (ed.), *Automated Microbial Identification and Quantitation*, Interpharm Press, Buffalo Grove, IL.
- Falkinham, J.O., III. 1998. Transmission of mycobacteria, p.178-209. In: P.R. Gangadharam and P.A. Jenkins (eds.), *Mycobacteria*, Chapman and Hall, New York, NY.
- Jensen, D.M. and J.O. Falkinham, III. 1996. Drug resistance mechanisms in *Mycobacterium tuberculosis* and *Mycobacterium avium*, p. 295-307. In: S.G. Pandalai (ed.), *Recent Research Developments in Antimicrobial Agents and Chemotherapy*, Volume 1, Research Signpost, Trivandrum.
- Falkinham, J.O., III. 1999. Molecular epidemiology: other mycobacteria, p. 136-160. In: C. Ratledge and J.W. Dale (eds.), *Mycobacteria: Molecular Biology and Virulence*. Blackwell Scientific, Oxford.

Papers in Journals

- Falkinham, J.O., III and A.J. Clark. 1974. Linkage relationships in a double male strain of *Escherichia coli* K-12. *Genetics* 78:633-644.
- Falkinham, J.O., III and R. Curtiss, III. 1976. Isolation and characterization of conjugation-deficient mutants of *Escherichia coli* K-12. *J. Bacteriol.* 126:1194-1206.
- Falkinham, J.O., III. 1977. *Escherichia coli* K-12 mutants with alternate requirements for vitamin B6 and branched-chain amino acids and lacking transaminase C. *J. Bacteriol.* 130:566-568.
- Falkinham, J.O., III, B.C. Parker, and H. Gruft. 1979. Progress Report: isolation of atypical mycobacteria from different regions of the United States. *Bull. Intl. Union Against Tuberculosis* 54:339-341.
- Falkinham, J.O., III. 1979. Gene *lon* and plasmid inheritance in *Escherichia coli* K-12. *J. Bacteriol.* 139:1054-1057.
- Wendt, S.L., B.C. Parker, and J.O. Falkinham, III. 1979. Occurrence and distribution of human bacterial pathogens in Virginia surface waters, p. 1-68. *Bulletin 118*. Virginia Water Resources Research Center, Blacksburg, VA.

- Falkinham, J.O., III. 1979. Identification of a mutation affecting an alanine- α -ketoisovalerate transaminase activity in *Escherichia coli* K-12. *Molec. Gen. Genet.* 176:147-149.
- Gruft, H., A. Loder, M. Osterhout, B.C. Parker, and J.O. Falkinham, III. 1979. Postulated sources of atypical mycobacterial infections: estuaries and ocean waters. *Am. Rev. Respir. Dis.* 120:1385-1388.
- Falkinham, J.O., III, B.C. Parker, and H. Gruft. 1980. Epidemiology of infection by nontuberculous mycobacteria. I. Geographic distribution in the eastern United States. *Am. Rev. Respir. Dis.* 121:931-937.
- George, K.L., B.C. Parker, H. Gruft, and J.O. Falkinham, III. 1980. Epidemiology of infection by nontuberculous mycobacteria. II. Growth and survival in natural waters. *Am. Rev. Respir. Dis.* 122:89-94.
- Wendt, S.L., K.L. George, B.C. Parker, H. Gruft, and J.O. Falkinham, III. 1980. Epidemiology of infection by nontuberculous mycobacteria. III. Isolation of potentially pathogenic mycobacteria from aerosols. *Am. Rev. Resp. Dis.* 122:259-263.
- Winfield, S.L. and J.O. Falkinham, III. 1981. Effect of *recA* and *polA* mutations on gene duplication in *Salmonella typhimurium*. *Mutation Res.* 91:15-20.
- Hoffman, P.S. and J.O. Falkinham, III. 1981. Induction of tryptophanase in short cells and swarm cells of *Proteus vulgaris*. *J. Bacteriol.* 148:736-738.
- Gruft, H., J.O. Falkinham, III and B.C. Parker. 1981. Recent experience in the epidemiology of nontuberculous mycobacterial diseases. *Rev. Infect. Dis.* 3:990-996.
- Falkinham, J.O., III, K.L. George, B.C. Parker, and H. Gruft. 1983. Uric acid utilization by *Mycobacterium intracellulare* and *M. scrofulaceum* isolates. *J. Bacteriol.* 155:36-39.
- Parker, B.C., M.A. Ford, H. Gruft, and J.O. Falkinham, III. 1983. Epidemiology of infection by nontuberculous mycobacteria. IV. Preferential aerosolization of *Mycobacterium intracellulare* from natural waters. *Am. Rev. Respir. Dis.* 128:652-656.
- Falkinham, J.O., III, K.L. George, B.C. Parker, and H. Gruft. 1984. In vitro susceptibility of human and environmental isolates of *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum* to heavy metal salts and oxyanions. *Antimicrob. Agents Chemother.* 25:137-139.
- Meissner, P.S. and J.O. Falkinham, III. 1984. Plasmid-encoded mercuric reductase in *Mycobacterium scrofulaceum*. *J. Bacteriol.* 157:669-672.
- Falkinham, J.O., III and P.S. Hoffman. 1984. Unique developmental characteristics of the swarm and short cells of *Proteus vulgaris* and *Proteus mirabilis*. *J. Bacteriol.* 158:1037-1040.
- Brooks, R.W., B.C. Parker, H. Gruft, and J.O. Falkinham, III. 1984. Epidemiology of infection by nontuberculous mycobacteria. V. Numbers in eastern United States soils and correlation with soils characteristics. *Am. Rev. Respir. Dis.* 130:630-633.
- Brooks, R.W., K.L. George, B.C. Parker, and J.O. Falkinham, III. 1984. Recovery and survival of nontuberculous mycobacteria under various growth and decontamination conditions. *Canad. J. Microbiol.* 30:1112-1117.

- Meissner, P.S. and J.O. Falkinham, III. 1986. Plasmid DNA profiles as epidemiological markers for clinical and environmental isolates of *Mycobacterium avium*, *M. intracellulare* and *M. scrofulaceum*. J. Infect. Diseases. 153:325-331.
- George, K.L. and J.O. Falkinham, III. 1986. Selective medium for the isolation and enumeration of *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum*. Canad. J. Microbiol. 32:10-14.
- Mayer, B.K. and J.O. Falkinham, III. 1986. Catalase activity and its heat inactivation for differentiation of *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum*. Int. J. System. Bacteriol. 36:207-212.
- George, K.L., A.T. Pringle, and J.O. Falkinham, III. 1986. The cell surface of *Mycobacterium avium-intracellulare* and *M. scrofulaceum*: effect of specific chemical modifications on cell surface charge. Microbios 45:199-207.
- Fry, K.L., P.S. Meissner, and J.O. Falkinham, III. 1986. Epidemiology of infection by nontuberculous mycobacteria. VI. Identification and use of epidemiological markers for studies of *Mycobacterium avium*, *M. intracellulare* and *M. scrofulaceum*. Am Rev. Respir. Dis. 134:39-43.
- Mayer, B.K. and J.O. Falkinham, III. 1986. Superoxide dismutase activity of *Mycobacterium avium*, *M. intracellulare* and *M. scrofulaceum*. Infect. Immun. 53:631-635.
- Pittinger, C.A., A.L. Buikema, Jr. and J.O. Falkinham, III. 1987. In situ variations in oyster mutagenicity and tissue concentrations of polycyclic aromatic hydrocarbons. Environ. Tox. Chem. 6:51-60.
- Martin, E.C., B.C. Parker and J.O. Falkinham, III. 1987. Epidemiology of infection by nontuberculous mycobacteria. VII. Absence of mycobacteria in southeastern groundwaters. Am. Rev. Respir. Dis. 136:344-348.
- Erardi, F.X., M.L. Failla and J.O. Falkinham, III. 1987. Plasmid-encoded copper resistance and precipitation by *Mycobacterium scrofulaceum*. Appl. Environ. Microbiol. 53:1951-1954.
- Erardi, F.X., M.L. Failla and J.O. Falkinham, III. 1989. Accumulation and transport of cadmium by tolerant and susceptible *Mycobacterium scrofulaceum*. Antimicrob. Agents Chemother. 33:350-355.
- George, K.L. and J.O. Falkinham, III. 1989. Identification of cytoplasmic membrane protein antigens of *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum*. Canad. J. Microb. 35:529-534.
- Pethel, M.L. and J.O. Falkinham, III. 1989. Plasmid-influenced changes in *Mycobacterium avium* catalase activity. Infect. Immun. 57:1714-1718.
- Falkinham, J.O., III, K.L. George and B.C. Parker. 1989. Epidemiology of infection by nontuberculous mycobacteria. VIII. Absence of mycobacteria in chicken litter. Am. Rev. Respir. Dis. 139:1347-1349.
- Gross, W.B., J.O. Falkinham, III and J.B. Payeur. 1989. Effect of social environment and antibody responsiveness on *Mycobacterium avium* infection in chickens. Avian Diseases 33:411-415.
- Stormer, R.S. and J.O. Falkinham, III. 1989. Differences in antimicrobial susceptibility of colonial variants of *Mycobacterium avium*. J. Clin. Microbiol. 27:2459-2465.

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- Carlisle, G.C. and J.O. Falkinham, III. 1989. Enzyme activities and antibiotic susceptibility of colonial variants of *Bacillus subtilis* and *Bacillus licheniformis*. Appl. Environ. Microbiol. 55:3026-3028.
- Falkinham, J.O., III. 1990. Arylsulfatase activity of *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum*. Int. J. System. Bacteriol. 40:66-70.
- Jucker, M.T. and J.O. Falkinham, III. 1990. Epidemiology of infection by nontuberculous mycobacteria. IX. Evidence for two DNA homology groups among small plasmids in *M. avium*, *M. intracellulare*, and *M. scrofulaceum*. Am. Rev. Respir. Dis. 142:858-862.
- Via, L.E. and J.O. Falkinham, III. 1991. Isolation of restriction fragments from large plasmids recovered from bacteria with multiple plasmids. BioTechniques 11:442-443.
- Taber, R.A., M.A. Thielen, J.O. Falkinham, III, and R.H. Smith. 1991. *Mycobacterium scrofulaceum*: a bacterial contaminant in plant tissue culture. Plant Sci. 78:231-236.
- Kirschner, R.A., Jr., B.C. Parker, and J.O. Falkinham, III. 1992. Epidemiology of infection by nontuberculous mycobacteria. X. *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum* in acid, brown-water swamps of the southeastern United States and their association with environmental variables. Am. Rev. Respir. Dis. 145:271-275.
- Morrissey, A.B., T.O. Aisu, J.O. Falkinham, III, P.P. Eriki, J.J. Ellner, and T.M. Daniel. 1992. Absence of *Mycobacterium avium* complex in patients with AIDS in Uganda. J. AIDS 5:477-478.
- Arbeit, R.D., A. Slutsky, T.W. Barber, J.N. Maslow, S. Niemczyk, J.O. Falkinham, III, G.T. O'Connor, and C.F. von Reyn. 1993. Genetic diversity among strains of *Mycobacterium avium* causing monoclonal and polyclonal bacteremia in patients with AIDS. J. Infect. Dis. 167:1384-1390.
- von Reyn, C.F., R.D. Waddell, T. Eaton, R.D. Arbeit, J.N. Maslow, T.W. Barber, R.J. Brindle, C.F. Gilks, J. Lumio, J. Lähdevirta, A. Ranki, D. Dawson, and J.O. Falkinham, III. 1993. Isolation of *Mycobacterium avium* complex from water in the United States, Finland, Zaire, and Kenya. J. Clin. Microbiol. 31:3227-3230.
- Ijzerman, M.M., J.O. Falkinham, III, and C. Hagedorn. 1993. A liquid, colorimetric presence-absence coliphage detection method. J. Virol. Methods 45:229-234.
- Ijzerman, M.M., J.O. Falkinham, III, R.B. Reneau, Jr., and C. Hagedorn. 1994. Field evaluation of two colorimetric coliphage detection methods. Appl. Environ. Microbiol. 60:826-830.
- von Reyn, C.F., J.N. Maslow, T.W. Barber, J.O. Falkinham, III, and R.D. Arbeit. 1994. Persistent colonisation of potable water as a source of *Mycobacterium avium* infection in AIDS. Lancet 343:1137-1141.
- Reddy, V.M., K. Parikh, J. Luna-Herrera, J.O. Falkinham, III, S. Brown, and P.R.J. Gangadharam. 1994. Comparison of virulence of *Mycobacterium avium* complex (MAC) strains isolated from AIDS and non-AIDS patients. Microbial Pathogen. 16:121-130.
- Falkinham, J.O., III. 1994. Epidemiology of *Mycobacterium avium* infection in the pre- and post-HIV era. Res. Microbiol. 145:169-172.
- Via, L.E. and J.O. Falkinham, III. 1995. Comparison of methods for isolation of *Mycobacterium avium* complex DNA for use in PCR and RAPD fingerprinting. J. Microbiol. Meth. 21:151-161.

- Eaton, T., J.O. Falkinham, T.O. Aisu, and T.M. Daniel. 1995. Isolation and characteristics of *Mycobacterium avium* complex from water and soil samples in Uganda. *Tubercle Lung Dis.* 76:570-574.
- Eaton, T., J.O. Falkinham, III, and C.F. von Reyn. 1995. Recovery of *Mycobacterium avium* from cigarettes. *J. Clin. Microbiol.* 33:2757-2758.
- Warek, U. and J.O. Falkinham, III. 1996. Action of clofazimine on the *Mycobacterium avium* complex. *Res. Microbiol.* 147:43-48.
- Rastogi, N. and J.O. Falkinham, III. 1996. Solving the dilemma of antimycobacterial chemotherapy. *Res. Microbiol.* 147:7-10.
- von Reyn, C.F., R.D. Arbeit, A.N.A. Tosteson, M.A. Ristola, T.W. Barber, R. Waddell, C.H. Sox, R.J. Brindle, C.F. Gilks, J. Edwards, J.O. Falkinham, III, G.T. O'Connor. 1996. The international epidemiology of disseminated *Mycobacterium avium* complex infection in AIDS. *AIDS* 10:1025-1032.
- Ristola, M.A., C.F. von Reyn, R.D. Arbeit, H. Soini, J. Lumio, A. Ranki, S. Bühler, R. Waddell, A.N.A. Tosteson, J.O. Falkinham, III, and C.H. Sox. 1999. High rates of disseminated infection due to non-tuberculous mycobacteria among AIDS patients in Finland. *J. Infection* 39:61-67.
- Kirschner, R.A., B.C. Parker, and J.O. Falkinham, III. 1999. Humic and fulvic acids stimulate the growth of *Mycobacterium avium*. *FEMS Microbiol. Ecol.* 30:327-332.
- Taylor, R.H., J.O. Falkinham, III, C.D. Norton, and M.W. LeChevallier. 2000. Chlorine-, Chloramine-, Chlorine Dioxide- and Ozone-susceptibility of *Mycobacterium avium*. *Appl. Environ. Microbiol.* 66:1702-1705.
- Cain, C.C., A.T. Henry, R.H. Waldo, III, L.J. Casida, Jr., and J.O. Falkinham, III. 2000. Identification and characteristics of a novel *Burkholderia* strain with broad-spectrum antimicrobial activity. *Appl. Environ. Microbiol.* 66:4139-4141.
- Stanek, J.E. and J.O. Falkinham, III. 2001. Rapid coliphage detection assay. *J. Virol. Meth.* 91:93-98.
- Falkinham, J.O., III, C.D. Norton, and M.W. LeChevallier. 2001. Factors influencing numbers of *Mycobacterium avium*, *Mycobacterium intracellulare*, and other mycobacteria in drinking water distribution systems. *Appl. Environ. Microbiol.* 67:1225-1231.
- Cowan, H. E. and J. O. Falkinham, III. In Press. A luciferase-based method for assessing chlorine-susceptibility of *Mycobacterium avium*. *J. Microbiol. Meth.*

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RESEARCH GRANTS AND FINANCIAL SUPPORT

- 1999-2002 Physiological Ecology of Mycobacteria
Applied Microbiology and Genetics, \$ 100,000
- 1998-2001 Genetic Studies of *Burkholderia casidae* strain 2.2 N
Dominion Biosciences, Inc., \$ 101,000
- 1997-1999 PCR Detection of Mycobacteriosis in Aquaculture of Fish
NOAA, Sea Grant Program, \$ 120,000.
- 1996-1999 Occurrence and Control of *Mycobacterium avium* Complex,
American Water Works Association Research Foundation,
\$ 250,000.
- 1996-1998 Predator Fungicide Development,
Dominion Biosciences, Inc., \$ 175,000.
- 1993-1995 Commercial Development of a Rapid Coliphage Assay,
Virginia Center for Innovative Technology, \$ 128,515.
- 1991-1994 Disseminated *Mycobacterium avium* in AIDS,
National Institute of Allergy and Infectious Disease,
\$ 267,550.
- 1991-1994 Clofazimine Action in Mycobacteria,
Heiser Program for Research in Leprosy, \$ 18,315.
- 1989-1990 Mechanism of Clofazimine Resistance in *Mycobacterium avium*,
The Potts Foundation, \$ 5,300.
- 1987-1990 Epidemiology of Infection by Atypical Mycobacteria,
National Institute of Allergy and Infectious Diseases,
\$ 338,208.
- 1986-1987 Comparison of Mitochondrial DNA from Dairy and Beef Cattle Breeds,
Biomedical Research Support Grant, \$ 2,100.
- 1983-1986 Epidemiology of Infection by Atypical Mycobacteria,
National Institute of Allergy and Infectious Disease,
\$ 503,410.
- 1983-1984 Proof of Relatedness of Mercury- and Cadmium-resistant Human and
Environmental Isolates of *Mycobacterium avium*, *M. intracellulare*,
and *M. scrofulaceum*. Biomedical Research Support Grant, \$ 2,000.
- 1982-1983 Improvement in Silage Fermentation Through Genetic Engineering of
Lactobacilli, George A. Jeffreys and Co., Inc. \$ 1,800.
- 1980-1982 Analysis of the lon-locus of *Escherichia coli* K-12,
National Institute of Allergy and Infectious Disease,
\$ 28,733.
- 1979-1982 Epidemiology of Infection by Atypical Mycobacteria,
National Institute of Allergy and Infectious Diseases,
\$ 350,098.
- 1977-1980 Membrane Involvement in Bacterial Conjugation,
National Institute of Allergy and Infectious Diseases,
\$ 51,101.
- 1977-1979 Epidemiology of Infection by Atypical Mycobacteria,
National Institute of Allergy and Infectious Diseases,
\$ 120,323.
- 1977-1978 Occurrence, Distribution, and Detection of Water-borne Bacterial
Pathogens, Virginia Office of Water Resources Research, \$ 15,907.

THESES AND DISSERTATIONS DIRECTED

- Taylor, R.T. (M.S., Microbiology, 1998), "Chlorine, Chloramine, Chlorine Dioxide, and Ozone susceptibility of *Mycobacterium avium*."
- Cowen, H.E. (M.S. Microbiology, 1998), "Rapid, Quantitative Assessment of *Mycobacterium avium* Susceptibility to Chlorine Based on the Firefly Luciferase Reporter Gene."
- Jensen, D.M. (Ph.D., Microbiology, 1997), "Genetic Basis for Macrolide Resistance in *Mycobacterium avium*".
- Stanek, J.E. (M.S., Microbiology, 1997), "Development of a Rapid Coliphage Detection Assay".
- Eaton, T. (M.S., Microbiology, 1993), "Epidemiology of *Mycobacterium avium* complex infecting AIDS patients".
- Via, L.E. (Ph.D., Microbiology, 1993), "Insertion sequence IS1141: Discovery, characterization and association with *Mycobacterium avium* colonial variation".
- Jucker, M.T. (Ph.D., Microbiology, 1991), "Identification and characteristics of plasmid homology groups of *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum*".
- Carlisle, G.C. (M.S. Microbiology, 1991), "Isolation and characterization of the major cytoplasmic membrane protein of *Mycobacterium avium*".
- Warek, U. (M.S., Microbiology, 1990), "Mechanism of action of clofazimine in *Mycobacterium avium* and *Mycobacterium intracellulare*".
- Stormer, R.S. (M.S. Microbiology, 1989), "Differences in antimicrobial susceptibility of pigmented and unpigmented colonial variants of *Mycobacterium avium*".
- Pethel, M.L. (M.S. Microbiology, 1988), "Plasmid-influenced changes in *Mycobacterium avium* catalase".
- Erardi, F.X. (M.S. Microbiology, 1986), "Characterization of cadmium susceptibility in *Mycobacterium avium*, *M. intracellulare* and *M. scrofulaceum*."
- Mayer, B.K. (M.S. Microbiology, 1985), "Investigation of catalase and superoxide dismutase from *Mycobacterium avium*, *M. intracellulare*, and *M. scrofulaceum*".
- Fry, K.W. (M.S. Microbiology, 1984), "Comparison of environmental and clinical strains of *Mycobacterium avium*, *M. intracellulare* and *M. scrofulaceum*".
- Meissner, P.S. (Ph.D. Genetics, 1984), "Plasmids of *Mycobacterium avium*, *M. intracellulare* and *M. scrofulaceum*: isolation, use as epidemiological markers and role in heavy metal-resistance".
- Cosby, W.M. (M.S. Microbiology, 1984), "Genetic engineering lactobacilli for improved alfalfa ensiling and citrate resistance".
- Smith, R.T. (Ph.D. Microbiology, 1983), "Effect of temperature-induced membrane lipid phase transitions in recipient cells on conjugation in *Escherichia coli* K-12".
- Brooks, R.W. (M.S. Microbiology, 1983), "Soil as a possible origin of organisms of the *Mycobacterium avium*, *M. intracellulare* and *M. scrofulaceum* (MAIS) complex in the southeastern United States".

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Torres-Cabassa, A.S. (Ph.D. Genetics, 1982), "Genetic analysis and phenotypic characterization of Lon⁻ mutants of *Escherichia coli* K-12".

Winfield, S.L. (M.S. Microbiology, 1979), "Genetic duplication in *Salmonella typhimurium*".

Ferguson, K.P. (M.S. Microbiology, 1978), "Identification of a mutation affecting plasmid establishment in *Escherichia coli* K-12".

Fiore, J.D. (M.S. Microbiology, 1978), "Studies of the utility of lectin-induced agglutination and bacteriophage adsorption in determining bacterial lipopolysaccharide composition".

TEACHING

Genetics - Sophomore introductory genetics course.

Genetics Laboratory - Sophomore laboratory course in genetic techniques.

Microbiology - Sophomore introduction to all aspects of microorganisms.

Microbial Genetics - A senior and graduate level course on the genetics of eukaryotic and prokaryotic microorganisms and their viruses.

Molecular Biology - A junior and senior level course on eukaryotic and prokaryotic molecular biology and recombinant DNA technology.

Topics in Microbial Genetics - Graduate, rotating topics course in microbial genetics.

Molecular Biology Laboratory - A senior and graduate level laboratory course in molecular biological techniques.

Humanities and the Biological Sciences - Course in the Humanities, Science, and Technology Program on issues surrounding genetic engineering.

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ADMINISTRATIVE AND DEPARTMENTAL SERVICE

University

Promotion and Tenure Committee, 1997-1999
 Vice President, Faculty Senate, 1991-1992
 Secretary/Treasurer, Faculty Senate, 1990-1991
 Senator, Faculty Senate, 1989-1993
 Chair, Faculty Senate Committee on Reconciliation, 1991-1994
 Member, Laboratory & Hazardous Material Committee, 1995-present
 Chair, Commission on University Support, 1992-1993
 Chair, Commission on Faculty Affairs, 1991-1992
 Chair, Interdepartment Genetics Program, 1981-1982
 University Pre-Medical/Dental Advising Committee, 1975-1981

College

Personnel Committee, College of Arts and Sciences, 1994-1996
 Secretary, College of Arts and Sciences Faculty Senate, 1989-1990
 Liberal Arts and Sciences Major Advisory Committee, 1980-1988
 Humanities, Science and Technology Faculty, 1976-1990

Department

Graduate Advisor, 1991-1996
 Chair, Molecular Cell Biologist Search Committee, 1992-1993
 Chair, Microbiologist Search Committee, 1994-1995
 Member, Microbiologist Search Committee, 1995-1996
 Member, Curriculum Committee, 1990-1993
 Member, Graduate Selection Committee 1988-1989
 Member, Graduate Diagnostic and Qualifying Examination Committee, 1984-1988
 Member, Research Committee, 1974-1976
 Member, Biology Department Head Evaluation Committee, 1975
 Member, Safety Committee, 1975-1990
 Member, Self Study Committee, 1975-1976
 Chair, Undergraduate Awards Committee, 1979-1980

PROFESSIONAL SERVICE

American Society for Microbiology
 Nominee, Mycobacteriology Division Chair, 1992
 Chair, Mycobacteriology Division Nominations Committee, 1990
 Member, Mycobacteriology Division Program Committee, 1989
 Member, Mycobacteriology Division Nominations Committee, 1988

PUBLIC AND PERSONAL SERVICE

Episcopal Diocese of Southwestern Virginia
 Member, Standing Committee, 1990-1993
 Member, Executive Committee, 1986-1989
 Chair, Grace House Mission Committee, 1979-1992
 Blacksburg Chamber of Commerce
 Vice President, Government Affairs, 1986-1989
 Executive Board, 1984-1989
 Faculty Advisor
 Gamma Beta Phi (Scholarship, Service), 1988-1996
 Sigma Alpha Epsilon (Fraternity), 1983-present

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